

posterior segments, dark green to black. The under surface of the body is covered with short hairs, dull, olive green with darker marbling; two longitudinal lines along the neutral median moderately constant. The legs are brownish green, the basal portions of the femora and the tibiæ usually somewhat lighter, yellowish green. The style and a line under the edge of the thorax dusky white.

Winged female: The antennæ are shorter than the body, black, first and third basal segments yellowish. The eyes are brown; the beak reaches to the third pair of legs, is yellowish green, the tip and enlarged basal portion of the same, brown. The neck-ring is brown, anteriorly and posteriorly to which is margined with yellow, somewhat covered with hairs. Head and chest shining black; the dorsum of the abdomen shining olive green. The cornicles somewhat long, club shaped; the distal half thick and brown, the basal half thin and greenish yellow. The curved style is small, scarcely 1-3 the cornicles in length, and has the posterior segments blackish brown. The belly is dull olive green with two longitudinal median lines. The legs are dark brown to black, the base of the femora, and also, often the tibiæ of the fore legs dirty-yellowish green. The wings are transparent with dark brown veins; the base of the wings, the stigma and the subcostal vein yellowish brown.

Fulton County (New York) Tipulidæ—I.

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During the season of 1909, a large number of more or less interesting crane-flies were collected by the writer at various localities in Fulton County, N. Y. Of the great amount of material collected, comparatively few specimens have been determined, and these are mentioned herewith. The species, *Erioptera dulcis* O. S., *Linnophila lenta* O. S., *Hexatoma megacera* O. S., *Pachyrhina macrocera* Say, *Tipula trivittata* Say, and *T. flavicans* Fabr., are not recorded in Prof. Needham's list of the New York crane-flies (23d Report of New York State Entomologist, Bull. 124 of the State Museum). Many of the species are comparatively uncommon.

The New York Tipulidæ have been sadly neglected by the majority of collectors. The two most important collections made in the State are those of Baron Osten Sacken and Professor Needham.

Fulton County, in which all of my collecting was done, contains about all of the varied situations in which the different crane-flies occur. The Adirondack Mountains, with their scores of little lakes, occupy the northern half of the county; a river flows through the northeast corner; while great tracts of marshland (the Vlei) lie in the eastern part. The altitude ranges from about 500 feet up to 2,700 feet. My main collecting grounds are as follows:

1. The Woodworth's Lake and Canada Lake country, in the central, or west central, portion of the county. Small mountain lakes, lying between 1,500 and 1,600 feet above sea level. The character of the fauna and flora is typically Canadian. Most of the species of Tipulidae secured by Osten Sacken at Trenton Falls, and by Needham at Old Forge, occur here.

2. The Sacandaga Park country, in the extreme northeast of the county, is on the Sacandaga River, a branch of the Hudson. Sport Island, in the river, is about half a mile in length, and several hundred feet in width. The ground is mostly low, with grassy fields in the center, the margins of the island being overgrown with rank shrubbery, ferns, etc., forming choice haunts for many insects. The island is connected with the mainland (Sacandaga Park) at the northwest end, by a large wooden bridge. There is a broad strip of low land bordering the northeast coast of the island for several hundred feet. On each side of the island is a dam of about six feet drop, skirting the east shore of the island from the dam by several hundred feet to the south, are broad, pebbly beaches. On the southeast side of the island is a deep indentation into the land, an offshoot of the main stream, but filled with quiet water; this is called the "bayou." The altitude of the island is about 875 feet. The fauna and flora shows an intermingling of Canadian and Transition forms.

3. Gloversville, N. Y., in south-central part of the county; altitude, 900 feet.

4. Johnstown, N. Y., in southern part of the county; altitude, 700 feet.

These last two localities are in the township of Johnstown. Both cities are situated on the Cayudetta Creek, and only three miles apart. The fauna is mainly Transition.

The determinations have all been made, or confirmed by, Professors C. W. Johnson and J. G. Needham, to whom my sincere thanks are due.

1. *Rhipidia maculata* Meigen.

Woodworth's Lake (Bleecker township); altitude 1,600 feet; August 24, 1909; a few specimens, hovering about the crevices in a small cliff.

2. *Discobola argus* Say.

Canada Lake (Caroga township); altitude 1,550 feet; July 10, 1909; one in a spider's web, still alive. Woodworth's Lake (Bleecker township), altitude about 1,625 feet, August 22, 1909; one specimen, swept from rank, palustral vegetation.

3. *Limnobia parietina* O. S.

One fine specimen, Woodworth's Lake, August 20, 1909, from a small cliff along the outlet. My field notebook says, "From a crevice high up on the face of the cliff, I drove out a large crane-fly. It flew out of the cranny with sluggish, lumbering flight and lit on the top of a hemlock tree a foot or two away. By jumping up, I managed to sweep the specimen into my net."

4. *Toxorrhina muliebris* O. S.

I swept one specimen from tall, rank vegetation at Sacandaga Park. It was taken along the railroad embankment, north of the railroad station, about sunset, July 5, 1909.

5. *Rhamphidia flavipes* Macq.

Two specimens at Mountain Lake Bog Pond (Johnstown township); altitude 1,580 feet, June 26, 1909. One specimen swept from rank grasses at Sport Island, Sacandaga River, June 20, 1909. One specimen, southeast of Johnstown, N. Y., September 6, 1909.

6. *Cladura indivisa* O. S.

Woodworth's Lake, August 24, 1909, two specimens flying about in the woods. Johnstown, N. Y., September 12, 1909,

one specimen. It was extraordinarily abundant in a woods near Gloversville, N. Y., on September 22, 1909. The following is from my field notes:

"I went to Simmon's Woods, southeast of Gloversville, N. Y., this afternoon, and was very agreeably surprised at the occurrence, in large numbers, of this usually uncommon insect. Near the entrance of the woods, where Simmon's Brook emerges, the insects were found in numbers.

"At each step they flew out of the bushes to others farther away. They are wary insects, and when sitting on the upper side of a leaf, slip over the edge and hang inverted from the lower side when alarmed by an observer.

"They present a very characteristic attitude, sitting on the leaf of a tree, with their wings folded flat over the abdomen, and the six long legs stretched out over the leaf. A few were taken in copulation; these were all hanging on the under side of a leaf. Their habit of clinging to the under surface of a leaf is quite remarkable and I found several by looking for them there.

"There were hundreds of specimens in the low bushes of the woods, usually on the broad leaves of deciduous trees at a height of two or three feet. Sometimes they would alight on hemlock, and, occasionally, in ferns near the ground. It was the only Tipulid observed here to-day."

7. *Rhypholophus monticola* O. S.

Woodworth's Lake (Bleecker township), August 24, 1909. Several specimens flying about a small cliff along the outlet.

8. *Rhypholophus rubellus* O. S.

Along the Mountain Lake Railroad track, about two miles north of Gloversville, N. Y. One specimen, July 3, 1909, swept from ferns, in a damp woodland (Power House Woods).

9. *Erioptera (Mesocyphona) caloptera* Say.

Very common about Johnstown, N. Y.; first taken on the evening of June 1, 1909, several specimens swept from tall meadow grass. Very common throughout the summer, into September, in similar habitats. Sacandaga Park (Northampton township), July 5, 1909, a few specimens taken.

10. *Erioptera (Mesocyphona) dulcis* O. S.

One specimen in company with the last, which it somewhat resembles.

11. *Erioptera (Hoplolabis) armata* O. S.

Not at all rare about Johnstown, N. Y., from May and June until September 12, 1909, when I took a few specimens. It frequents shady places, such as gullies. Power House Woods (see *R. rubellus*), July 3, 1909, a few. Sport Island, Sacandaga R., July 5, 1909, very common.

12. *Molophilus hirtipennis* O. S.

Johnstown, N. Y., June 30, 1909, at twilight; July 1, 1909, one flew to a lamp in my house; not rare during the summer months.

13. *Goniomyia subcinerea* O. S.

Taken at the same time and place as *Rhypholophus rubellus* O. S. (No. 8); two specimens.

14. *Trichocera crumalis* Fitch.

Very common at times during the winter months. During November and in February and March it is found on cellar windows and, on warm days, out of doors. In late March and April it occurs in small swarms in sunny places in woods and along the edges of brush lots. On May 12, 1909, a very large swarm was observed at Johnstown, N. Y., hovering over a large fallen beech trunk. My latest record is May 19, 1909, one specimen at Johnstown, N. Y.

15. *Limnophila macrocera* Say.

Sacandaga Park, very common on damp vegetation along the railroad embankment north of the station. It was taken in large numbers on June 20 and 21, 1909. One specimen was taken near the Johnstown cemetery on July 2, 1909, and another on September 12, 1909. These are my only records. The species is generally not very common.

16. *Limnophila adusta* O. S.

East of Johnstown, N. Y., June 20, 1909, one specimen.

17. *Limnophila lenta* O. S.

Woodworth's Lake (Bleecker township), August 24, 1909.

It was not uncommon in the cool woods along the outlet of the lake.

18. *Limnophila (Dactylolabis) montana* O. S.

On May 16, 1907, I found this species very abundant around a stone quarry near the Gloversville Reservoir. The flies lurked in the crevices of the rocks and large numbers were collected as they hung inverted from the roof of the crannies. This is the only *Limnophila* that I have taken in such a situation. (This is mentioned in Needham's list, quoted before.)

19. *Hexatoma megacera* O. S.

This remarkable little species was not at all rare on Sport Island, Sacandaga R., June 6, 1909. It occurred on semi-palustral grasses along the northeast coast of the island and along the "bayou." It was very sluggish and not at all difficult to capture. A large number were secured.

20. *Eriocera longicornis* Walker.

Of this remarkable species I secured a single male specimen on May 18, 1907, flying at twilight over a grassy field near Gloversville, N. Y. On June 6, 1909, it occurred in large numbers on Sport Island, Sacandaga River. In the late afternoon a few scattered individuals were observed. Just after sunset the insect became very abundant along the north end of the island, hovering in small swarms over the water's edge and dancing about like many of our smaller Tipulids. Toward dusk, many species of may-flies and caddice-flies joined the little companies of dancing flies. Of the specimens secured, the males slightly predominated in numbers.

21. *Tricyphona (Amalopsis) inconstans* O. S.

Canada Lake (Caroga township), July 10, 1909, two specimens. Not at all rare about Woodworth's Lake in August. Johnstown, N. Y., in June, July, August and, especially, early September.

22. *Liogma nodicornis* O. S.

Mountain Lake Bog Pond (Johnstown township), altitude 1,585 feet, June 26, 1909. It was very common toward sunset

on rank, semipalustral vegetation. One specimen in the cemetery gully, Johnstown, N. Y., June 15, 1909.

23. *Phalacrocer a tipulina* O. S.

East end of Canada Lake (Caroga township), altitude 1,550 feet; one specimen only on July 10, 1909.

24. *Dolichocepa americana* Needham.

One specimen under the bridge at the outlet of the Mountain Lake Bog Pond (Johnstown township), altitude 1,585 feet. It was taken during a rainstorm, in company with *Bittacomorpha*, on June 13, 1909.

25. *Pachyrhina macrocera* Say.

One specimen in the gully on the north side of the Johnstown cemetery, June 30, 1909.

26. *Pachyrhina incurva* Loew.

Two specimens, male and female, in Johnstown cemetery gully on June 30, 1909.

27. *Pachyrhina ferruginea* Fabricus.

Two specimens near Johnstown, N. Y., June 24, 1909.

28. *Tipula abdominalis* Say.

Very common along the Park side of Sacandaga River from July 6 to 16, 1906. It was kindly determined by Prof. E. P. Felt.

29. *Tipula trivittata* Say.

Two specimens on Sport Island, Sacandaga River, June 12, 1909 (northeast coast). One specimen on Sport Island, June 20, 1909.

30. *Tipula flavicans* Fabr.

In early September this species became very common in most of the grassy fields and scanty brush lots about Johnstown, N. Y. Specimens were secured from September 3 until September 22, 1909, when I left that locality.

31. *Bittacomorpha clavipes* Fabr.

The phantom crane-fly is one of the most striking of our Tipuloidea. It is abundant and very widely distributed in the county. I have taken it in marshy woodland about Glovers-

ville (Cold Spring Woods) and near Johnstown, from June throughout August. It occurred at the Mountain Lake Bog Pond, June 13, 1909 (altitude 1,585 feet). It is a very common species at Sacandaga Park, frequenting the rank vegetation growing along the bottom of the railroad embankment. Specimens were observed June 20 to 22, 1909.

32. *Ptychoptera rufocincta* O. S.

One specimen in the Power House Woods near the government shooting range, north of Gloversville, N. Y., July 3, 1909.

33. *Idioplasta fitchii* O. S.

This was probably the most interesting species taken. Over half a century has elapsed since the discovery of this wonderful crane-fly by Asa Fitch.

I secured five specimens on Sport Island, Sacandaga River (Northampton township) from June 6 to 19, 1909. All five specimens were swept from the rank, tall vegetation along the northeast coast of the island, exactly opposite Wolf Island. The first two specimens were taken on June 6, two more on June 12, and the last on June 19. The beautiful ocellate markings on the wings are quite variable in shape and character. They are, however, generally arranged in three bands, a basal one, a medial one and a sub-terminal one, with a few scattered rounded apical marks. In one specimen the bands are almost complete, there being but one detached apical spot. In another specimen (June 12, 1909) the marks are separated, rounded spots, about three apical ones, five sub-apical ones, six medial ones, and three or four basal ones. These separated spots are usually contiguous but separable by their light color with a broad dark ring surrounding the marking.

The markings of the wings of my specimens are very conspicuous and, as Prof. Johnson suggests, bear a great superficial resemblance to those of *Epiphragma fascipennis*.

Hiram—"Josiah bet Siras a dollar that he could pick up a hornet and carry it across the street."

Siras—"Which won?"

Hiram—"Well, Josiah got across with the hornet, but Siras argues that the hornet lifted him about 20 foot o' the way."